

**Improved Three-Dimensional X-ray Imaging System****ABSTRACT**

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An imaging system for generating an image of a planar segment of an object is disclosed. The imaging system includes an x-ray source, a planar detector, and a controller. The x-ray source generates x-rays from first and second source points, the x-rays from the first and second source points passing through the object. The planar detector includes a plurality of photodetectors covered by a layer of scintillation material that converts x-rays into visible light, the planar detector is positioned to receive x-rays from the first and second source points after the x-rays have passed through the object. The controller selects which of the source points generates the x-rays at any given time. The controller reads a first image formed by x-rays from the first source point and stored in a first portion of the planar detector while a second portion of the photodetectors measures x-rays from the second source point.

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